

Utility Patent Application

CONFIDENTIAL INFORMATION

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DUAL-COMPARTMENT STORAGE APPARATUS FOR A TRUCK BED WITH RECEIVING ZONE FOR BI-WHEELED VEHICLE AND COLLAPSIBLE RAMP 15 STOWED IN RAMP STORAGE COMPARTMENT

RELATED APPLICATIONS

The present invention was first described in Disclosure Document
Registration 526,123 filed on February 13, 2003 under 35 U.S.C. §122, 37
C.F.R. §1.14 and MPEP § 1706. There are no previously filed, nor currently
20 any co-pending applications, anywhere in the world.

BACKGROUND OF THE INVENTION

1. Field of the Invention

25 The present invention relates generally to dual compartment storage
apparatuses for trucks, and more particularly, to a storage apparatus having two
compartments spaced about a receiving zone for a wheel, wherein the
compartments are suspendingly elevated above the plane of the cargo bed, and

is accompanied by a collapsible ramp that is storable in a ramp storage compartment.

2. Description of the Related Art

5 With sales at an all-time high, the popularity of the pick-up style truck as an everyday vehicle is more wide spread than it ever has been. Their utility and convenience in hauling items coupled with the availability of luxury interiors and extended cab space have made the pickup a popular alternative to other vehicles. The availability of aftermarket accessories also enhances the attractiveness of pickup trucks as well. Perhaps one of the most common accessories is that of the
10 “behind-the-cab” type toolbox, for carrying tools and other smaller objects. However, these tool boxes shorten the available bed space, which becomes a problem for those hauling large, long items such as motorcycles. Typically, the tool box must be removed which takes time and reduces its versatility. Accordingly, the
15 need has arisen for a means by which the functionality of a bed mounted tool box can be enjoyed without affecting the pickup trucks ability to carry large items such as motorcycles. The development of the present invention fulfills this need.

 A search of the prior art did not disclose any patents that read directly on the claims of the instant invention; however, the following references were considered
20 related:

 U.S. Patent No. **3,963,129**, issued in the name of *Clayton*, discloses a

motorcycle carrier comprising a crane mounted to a truck with a power-winch actuated lift cable;

U.S. Patent No. **4,034,872**, issued in the name of *Jager*, discloses a motorcycle rack adapted for mounting to a tow truck comprising a V-shaped bracket and a cross-bar;

U.S. Patent No. **4,932,829**, issued in the name of *Miller*, discloses an articulated motorcycle carrier pivotally mounted and engaged with the bed of a truck;

U.S. Patent No. **4,921,152**, issued in the name of *Kemming*, discloses a combination storage container and motorcycle holder comprising two spaced apart storage compartments, the space therebetween for receiving the wheel of a motorcycle;

U.S. Patent No. **5,730,577**, issued in the name of *Jones*, discloses a motorcycle loading and unloading device comprising a ramp having a pair of spaced, parallel ramp rails;

U.S. Patent No. **6,176,672**, issued in the name of *Egan et al.*, discloses a telescoping personal motorcycle support structure comprising a support frame mountable to the bed of a truck which supports at least one telescoping, pivotal ramp assembly; and

U.S. Patent No. **6,186,727**, issued in the name of *Hamilton*, discloses an apparatus and method of transporting motorcycles comprising front and rear chocks

respectively coupled to dollies.

Consequently, there exists a continuous need for new product ideas and enhancements for existing products in the motorcycle transporting industry.

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SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide a dual storage compartment apparatus for a truck bed with a receiving zone for a wheel of a vehicle, a collapsible ramp and a ramp storage compartment for the ramp when not in use.

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It is an object of the present invention to provide a storage apparatus wherein each storage compartment is enclosed by an articulating lid.

It is another object of the present invention to provide a storage apparatus wherein each storage compartment includes a removable tray comprising compartments for individualized and specialized storage of smaller objects.

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It is another object of the present invention to provide a storage apparatus wherein each storage compartment comprises an upper anchoring plate and a lower anchoring plate, the upper anchoring plate for attachment to the sidewalls of a cargo area, and for receiving an option cap, the lower anchoring plate for attachment to the cargo bed of the cargo area. The upper anchoring plate and lower anchoring plate cooperatively act together to securely hold the storage apparatus in position during transport and use.

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It is another object of the present invention to provide a storage apparatus wherein each storage compartment comprises at least one channel and a dowel, the channel and dowel provided for attaching straps, cables, rope or other similar items thereto, circumscribing an object, and then attaching to a channel and
5 dowel of the opposite storage compartment.

It is another object of the present invention to provide a storage apparatus wherein each storage compartment comprises a first storage cell and a second storage cell, the first storage cell accessible via the articulating lid, the second storage cell accessible via an articulating door, the lid and door articulating in
10 planes perpendicular to one another.

It is another object of the present invention to provide a storage apparatus comprising an optional cap for covering the storage apparatus, the cap comprising a wheel well for accommodating the wheel of a vehicle to be transported by the truck.

15 It is another object of the present invention to provide a storage apparatus comprising a retractable cable with lock, the retraction reel housed within the storage compartment, and the cable penetrating an orifice provided in the rear wall of the storage compartment.

Briefly described according to one embodiment of the present invention, a
20 dual-compartment storage apparatus is a toolbox system for pickup trucks with a recessed receiving zone in the middle. It is designed to allow the wheel of a

motorcycle to fit into the slot and thus allows the entire motorcycle to fit in into the truck bed. The receiving zone accepts a tire of a motorcycle or bicycle, thus allowing the entire motorcycle to fit into the bed of the truck, which is usually impossible with a conventional tool box placed within the cargo area of a truck.

5 Additionally, the tool box provides tie-down points to secure the motorcycle during transport and prevent it from moving about. Finally, a storage compartment across the back of the box holds a collapsible ramp to allow the motorcycle to roll into and out of the bed with a minimum of effort.

BRIEF DESCRIPTION OF THE DRAWINGS

10 The advantages and features of the present invention will become better understood with reference to the following more detailed description and claims taken in conjunction with the accompanying drawings, in which like elements are
15 identified with like symbols, and in which:

FIG. 1 is a perspective view of the storage apparatus affixed within the cargo area of a truck;

FIG. 2 is a perspective view of the storage apparatus;

20 **FIG. 3** is a perspective view of a single storage compartment serving as a representative model for each storage compartment, the removable tray

exploded from storage and illustrating contours within the interior of the walls of a compartment;

FIG. 4 is a perspective view of a single storage compartment illustrating optional pegs that might be used to hold the tray;

5 **FIG. 5a** is an exploded perspective of the ramp;

FIG. 5b is a perspective view of the ramp assembled;

FIG. 6 is a top view of the storage apparatus illustrating the ramp storage compartment configuration.

10 DESCRIPTION OF THE PREFERRED EMBODIMENTS

The best mode for carrying out the invention is presented in terms of its preferred embodiment, herein depicted within Figures 1 through 6.

1. Detailed Description of the Figures

Referring now to **FIG. 1** through **FIG. 4** and **FIG. 6**, a storage apparatus
15 **10** is shown in accordance with a preferred embodiment of the present invention. The storage apparatus **10** is placed within and affixed to the cargo area **2** of a truck **1**. The cargo area **2** is defined by a pair of parallel sidewalls **3** and **4** each depending from a forward wall **5**, and a pivotal tail wall (tailgate) **6** parallel to the forward wall **5**. The sidewalls **3** and **4**, the forward wall **5** and the tailgate **6**
20 each depend from a cargo bed **7**. The storage apparatus **10** comprises two spaced apart storage compartments **12** and **14** and a receiving zone **16**

intermediately therebetween. Each one of the storage compartments **12** and **14** comprises an articulating lid **18**, an upper anchoring plate **20** and a lower anchoring plate **22**, wherein each one of the storage compartments **12** and **14** is suspendingly elevated above the cargo bed **7** and forms a storage space **24** and **26** therebetween. A ramp storage compartment **28** is externally coupled to the storage compartments **12** and **14**, and adjacently engages the forward wall **5** of the cargo area **2** when the storage apparatus **10** is positioned. A collapsible ramp **30** for facilitating loading onto and unloading from the cargo area **2** is provided. The ramp **30** is storable in the ramp storage compartment **28**.

The storage compartments **12** and **14** are mirror images of one another, therefore description of one storage compartment serves as a representative model of the other storage compartment. Each storage compartment **12** or **14** comprises at least one storage cell **32** formed by four upstanding walls **34**, **36**, **38** and **40** (an exterior sidewall **34**, an interior sidewall **36**, a front wall **38** and a rear wall **40**, specifically) depending from a floor **42**. The storage cell **32** is accessible via the articulating lid **18** (articulating via at least one hinge, or a plurality of hinges, commonly known in the art), wherein the lid **18** may be a spring-loaded lid **18** actuated by a push button lock **54** recessed and set at an approximate forty-five degree (45°) angle along the outer perimeter of lid **18**. In another embodiment, the lid **18** may include at least one or a plurality of handles for grasping and articulating the lid **18**. It is envisioned that the lid **18** may also

include a plurality of slots **55** provided in the top corners of the lid **18** for securement of bungee or other similar securing devices. It is also envisioned that a removable storage tray **44** may be provided, the tray **44** suspendingly resting near or at the top of the storage cell **32** via mateable hooks and pegs **60** (pegs shown in **FIG. 4**), integral channels and pegs, interference and gravity impingement by contours **58** provided along the interior of the upstanding walls **34, 36, 38** and **40** (as shown in **FIG. 3**), or other similar means for suspending the tray **44** at the proscribed profile. The tray **44** is envisioned as having a plurality of compartments **46** for storing a plurality of items therein. It is further envisioned that a second storage cell **48** may be provided in addition to the first storage cell **32**. The first storage cell **32** remains accessible via the lid **18** (articulating in a plane parallel to the cargo bed **7**), while the second storage cell **48** is envisioned as accessible via the lid **18** (as shown in **FIG. 3**) or an articulating door **50** (articulating in a plane perpendicular to the cargo bed **7** via at least one hinge, or a plurality of hinges, commonly known in the art, shown in **FIG. 4**). In a two storage cell **32** and **48** arrangement, it is envisioned that the first storage cell **32** assumes an upper profile, while the second storage cell **48** assumes a lower profile, thereby providing two sources of enclosed storage easily accessible via articulating lids **18** and/or doors **50**, respectively, and also providing the opportunity for convenience by allowing multiple users to access separate cells **32** and **48** simultaneously to retrieve stowed objects and/or items.

In another embodiment, the doors **50** are permanently affixed to the storage compartments **12** and **14** so as to provide a secure structure for attachment of straps, bands, rope or other similar means for securing objects to the channels **62** and dowels **64**.

5 Each of the storage compartments **12** and **14** also include an upper anchoring plate **20** and a lower anchoring plate **22**. The upper anchoring plate **20** depends from an exterior sidewall **34** of a storage compartment **12** or **14**. It is envisioned that one arrangement of the upper anchoring plate **20** is coextensive with the top of the exterior sidewall **34** and depending perpendicularly therefrom.

10 The upper anchoring plate **20** comprises a plurality of apertures **52** for attachment of the upper anchoring plate **20** to a sidewall **3** or **4**. Furthermore, the apertures **52** allow for attachment of a bed top (not shown, but known in the art as substantially orthogonal apparatus secured to the bed of a pick up truck for enclosing the bed and protecting the contents from environmental elements).

15 The lower anchoring plate **22** depends from an interior sidewall **36** and includes a plurality of apertures **56** for attaching the lower anchoring plate **22** to the cargo bed **7**. The lower anchoring plate **22** is dimensioned so as to suspendingly elevate the storage compartments **12** and/or **14** above the plane of the cargo bed **7**. The suspended elevation of the storage compartments **12** and **14** form

20 additional storage spaces **24** and **26** between the floor **42** of each storage compartment **12** and **14** and the cargo bed **7**. These storage spaces **24** and **26**

are envisioned as accommodating items, such as boards, pipe or other items of length that might not otherwise fit into the cargo area **2** without the additional length and space provided by the storage spaces **24** and **26**. By way of example only, and not intended as a limitation of the scope of the claims, additional
5 wooden boards used for loading, of a length between six (6) feet and eight (8) feet, are comfortably accommodated in the cargo area **2** by sliding the boards lengthwise into the storage spaces **24** and **26**, and allowing for the tailgate **6** to fully and securely close against the sidewalls **3** and **4**, as intended.

Along one of the upstanding walls **40** (rear wall **40**), a plurality of channels
10 **62** are provided, wherein each one of said plurality of channels **62** comprise at least one dowel **64**. Cooperatively, the channels **62** and dowels **64** act in permitting attachment of straps, bands, rope and other means of securement, so that these means are attachable to each of the storage compartments **12** and **14**. By way of example only, and not intended as a limitation on the scope of the
15 claims, a nylon strap might be attached to one channel **62** and dowel **64** of storage compartment **12**, and the strap then circumscribed about an object that might otherwise shift during transport (such as a motorcycle), and then the strap may be attached to a channel **62** and dowel **64** on the opposite storage compartment **14**.

20 Further envisioned along the upstanding wall **40** (rear wall **40**) is a lockable cable **66** for securing a wheel **9** of a vehicle **8**. The lockable cable **66** retractably

affixed to at least one of the storage compartments **12** or **14**. The cable **66** is envisioned as retractable by a spring-biased reel commonly known in the art of retractable reels. The reel is envisioned as being housed within the storage compartments **12** and **14**, protecting the reels from tampering and environmental changes. The cable **66** is envisioned as penetrating an orifice **68** formed in the rear wall **40**. The lock **70** provided on the cable **66** provides a two-fold function, first, securely connecting the cable **66** between the storage compartments **12** and **14**, and second, discouraging theft of the object secured by the cable **66**. The lock **70** is envisioned as either a key lock commonly known in the art, or a combination lock of the varieties commonly known in the art.

Referring now to **FIG. 5a** and **FIG. 5b**, the ramp **30** comprises an intermediate section **84**, an upper section **86** detachably affixed to an end of the intermediate section, and a lower section **88** detachably affixed to an end of the intermediate section **84** opposite of the upper section **86**. The upper section **86** and lower section **88** are collapsible about the intermediate section **84**, either by foldably pivoting along locking pins **90** inserted to couple the upper section **86** to the intermediate section **84** and the lower section **88** to the intermediate section **84**, respectively, or by removal of the locking pins **90** and laying the sections **84**, **86** and **88**, respectively, upon one another. The locking pins **90** are envisioned as having an outwardly biased ball bearing **92** (biased by a spring, commonly known in the art). The pins **90** are inserted through pin apertures **94a**, **94b**, **94c**

and **94d** formed in the intermediate, upper and lower sections **84**, **86** and **88**, respectively. Pin apertures **94a** are aligned with either pin apertures **94c** or **94d** with a pin **90** inserted therethrough, connecting either the upper or lower section **86** or **88** with intermediate section **84** via complimentary fit. Pin apertures **94** are aligned with the remaining pin apertures **94c** or **94d** with a pin **90** inserted therethrough, connecting either the upper or lower section **86** or **88** with intermediate section **84** via complimentary fit. The pins **90** act to maintain the three sections **84**, **86** and **88** in a relatively planar configuration so that ingress and egress from the cargo area **2** is easily achieved and the integrity of the ramp **30** is maintained. The ramp **30** allows for the loading and unloading of material to and from the cargo area **2** of a truck **1**, and then after use, the convenient storage of the ramp **30** without consuming valuable space.

Ramp storage compartment **28** is externally coupled to the storage compartments **12** and **14** along an upstanding wall **38** (front wall **38**). The ramp storage compartment **28** comprises four upstanding walls **72**, **74**, **76** and **78** depending from a base wall **80**. The walls **72**, **74**, **76**, **78** and **80** are arranged and dimensioned so as accommodate the ramp **30** in a foldably collapsed arrangement. Thus, the ramp storage compartment **28** is envisioned to have a longitudinal width ("w") of no greater than six (6) inches, with lesser widths envisioned to conserve space and materials. The ramp storage compartment **28**

further comprises at least one attachment tab **96** affixed to the ramp storage compartment **28**, wherein at least one attachment tab **96** is provided for affixing the storage apparatus **10** to the forward wall **5** of the truck **1**.

5 2. Operation of the Preferred Embodiment

To use the present invention, in accordance with a preferred embodiment of the present invention, a user will affix the storage apparatus **10** to the cargo area **2** of a truck **1** by permanent or semi-permanent attachment of threaded screws or bolts through the upper anchoring plates **20** into the sidewalls **3** and **4**,
10 through the lower anchoring plates **22** into the cargo bed **7**, and through at least one attachment tab **92** into the forward wall **5**. By securing the storage apparatus **10** in this manner, the storage compartments **12** and **14** are
suspendingly elevated above the plane of the cargo bed **7**, providing additional storage spaces **58** and **60**, and retaining a receiving zone **16** for accommodate a
15 wheel or wheels **9** of a vehicle **8**.

A user may store any items that may be accommodated in the various compartments provided in the storage apparatus **10**, including small hand tools, large hand tools, automatic battery powered tools, tool accessories, attachment means (such as screws, nuts, bolts, nails, tacks, etc.), containers of engine fluid
20 (such as motor oil, two-cycle oil, transmission fluid, power steering fluid, anti-freeze, windshield wiper fluid, water, etc.).

A user may store a bi-wheeled vehicle **8**, such as a motorcycle, moped or bicycle, by assembling the ramp **30** at the tailgate **6** so that the bi-wheeled vehicle may be rolled onto the cargo bed **7**. The user will then place the wheel **9** into the receiving zone **16** and secure the wheel **9** in place via the lockable cable **66**. The user can then disassemble the ramp **30** and store in the ramp storage compartment **28**. The user may then transport the vehicle **8** safely without concern for shifting or tipping of the vehicle **8**.

The foregoing descriptions of specific embodiments of the present invention have been presented for purposes of illustration and description. They are not intended to be exhaustive or to limit the invention to the precise forms disclosed, and obviously many modifications and variations are possible in light of the above teaching. The embodiments were chosen and described in order to best explain the principles of the invention and its practical application, to thereby enable others skilled in the art to best utilize the invention and various embodiments with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the Claims appended hereto and their equivalents. Therefore, the scope of the invention is to be limited only by the following claims.